AMENDMENTS TO THE CLAIMS

1-29. (canceled)

30. (currently amended) A method of storing image data of a picture in a plurality of levels, each level corresponding to a specific resolution level of the image data, said method comprising:

receiving an element of the picture for storing on one of the plurality of levels of image data;

identifying a subpicture in a lowest one of the plurality of levels in which the received element may be placed, wherein the lowest level represents a lowest resolution of image data, and wherein each subpicture stores a predetermined maximum amount of elements;

determining whether the identified subpicture has previously been loaded;

if the identified subpicture is determined not to have been loaded, loading the identified subpicture;

placing the received element in the identified subpicture;

determining if a number of elements in the identified subpicture exceeds the predetermined maximum; and

if the number of elements in the identified subpicture exceeds the predetermined maximum, identifying a number of overlapping subpictures, in a higher one of the plurality of levels, into which the received element may be placed, wherein the higher level represents a higher resolution of image data than the lowest level, and wherein the subpicture in the higher level is capable of storing a larger number of elements than the subpicture in the lowest level.

31. (previously presented) The method of claim 30 further comprising:

determining if a number of elements in the identified subpicture of the higher level exceeds the predetermined maximum; and

if the number of elements in the identified subpicture of the higher level exceeds the predetermined maximum, identifying a number of overlapping subpictures, in a next higher one of the plurality of levels, into which the received element may be placed,

wherein the next higher level represents a higher resolution of image data than the higher level.

32. (previously presented) The method of claim 30, wherein if the number of overlapping subpictures is zero, the method further comprises redefining the subpictures of the picture.

33. (previously presented) The method of claim 30, further comprising:

receiving a new element of the picture for storing in one of the plurality of levels of image data; and

repeating the steps of identifying, placing, and determining for the new element of the picture.

34. (previously presented) The method of claim 30, further comprising:

loading the identified subpicture prior to placing the received element in the identified subpicture.

35. (previously presented) The method of claim 30, wherein the step of identifying a number of overlapping subpictures further comprises:

sorting a list of overlapping subpictures; and

examining an overlapping element in the list.

36. (previously presented) The method of claim 35, further comprising:

adding the overlapping subpicture to an instantiation list; and

instantiating the overlapping subpictures from the instantiation list.

37. (previously presented) The method of claim 30, wherein the picture comprises an image with three-dimensional data.

38. (previously presented) An arrangement for storing image data related to a picture, the arrangement comprising:

at least one extent defining a dataset position in coordinate space by defining a coordinate position and a size in coordinate directions around the coordinate position;

at least one element defining a set of data belonging to the picture and having a common extent;

a plurality of subpictures defining a portion of the picture, each subpicture capable of storing a predetermined maximum amount of data; and

a plurality of levels arranged in a stacked relationship, each level having a different resolution and a different number of subpictures, wherein a subpicture in a higher level of the plurality of levels is capable of storing a larger predetermined maximum amount of data than a subpicture in a lower level of the plurality of levels.

39. (previously presented) The arrangement of claim 38, wherein a lowest one of the plurality of levels has a lower resolution level and fewer subpictures than a higher one of the plurality of levels.

40. (previously presented) The arrangement of claim 38, wherein a level of the plurality of levels represents the picture in its entirety.

41. (previously presented) The arrangement of claim 38, wherein a lowest one of the plurality of levels includes one subpicture representing the picture in its entirety.

42. (previously presented) The arrangement of claim 41, wherein a higher one of the plurality of levels includes a plurality of subpictures having a higher resolution than the lowest level.

43. (previously presented) The arrangement of claim 38, wherein the plurality of levels comprises four levels.

44. (previously presented) The arrangement of claim 38, wherein the picture comprises three-dimensional image data.

45. (currently amended) A graphics system for organizing and storing a picture, the graphics system comprising:

a processor; and

a memory having computer software code stored therein, the processor and the memory being capable of:

receiving an element of the picture for storing in one of the plurality of levels of image data;

identifying a subpicture in a lowest one of the plurality of levels in which the received element may be placed, wherein the lowest level represents a

lowest resolution of image data, and wherein each subpicture stores a predetermined maximum amount of elements;

determining whether the identified subpicture has previously been loaded;

if the identified subpicture is determined not to have been loaded, loading the identified subpicture;

placing the received element in the identified subpicture;

determining if a number of elements in the identified subpicture exceeds the predetermined maximum; and

if the number of elements in the identified subpicture exceeds the predetermined maximum, identifying a number of overlapping subpictures, in a higher one of the plurality of levels, into which the received element may be placed, wherein the higher level represents a higher resolution of image data than the lowest level, and wherein the subpicture in the higher level is capable of storing a larger number of elements than the subpicture in the lowest level.

46. (previously presented) The graphics system of claim 45, further comprising a display for displaying the picture.

47. (previously presented) The graphics system of claim 45, wherein the processor and memory are further capable of:

determining if a number of elements in the identified subpicture of the higher level exceeds the predetermined maximum; and

if the number of elements in the identified subpicture of the higher level exceeds the predetermined maximum, identifying a number of overlapping subpictures, in a next higher one of the plurality of levels, into which the received element may be placed, wherein the next higher level represents a higher resolution of image data than the higher level.

48. (previously presented) The graphics system of claim 45, wherein the processor and memory are further capable of, if the number of overlapping subpictures is zero, redefining the subpictures of the picture.

49. (previously presented) The graphics system of claim 45, wherein the processor and memory are further capable of:

receiving a new element of the picture for storing in one of the plurality of levels of image data; and

repeating the steps of identifying, placing, and determining for the new element of the picture.

50. (previously presented) The graphics system of claim 45, wherein the picture comprises three-dimensional image data.